TREATMENT OF ANTHRAX

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Anthrax has been liquidated as an epidemic desease on the territory of the USSR. However, up until the present time there still exists a threat of the emergence of individual outbreaks and sporadic cases, especially if there is a severe disruption in the standards of sanitary-veterinary legislation. In connection with this, the problem concerning the treatment of anthrax cases still remains urgent.

In recent years a number of papers have appeared which deal with the treatment of anthrax cases with antianthrax serum in conjunction with antibiotics (Rudnev, 1950 and 1962; Mashkilleyson, 1960; Bilibin, 1962; Leyman, 1961).

We had 12 anthrax patients aged 14 to 54 (5 males and 7 females) under observation. Of these, 3 men became ill as a result of dressing the carcass of a sick cow, and the remainder -- following contact with infected meat. All the patients entered the hospital in the first 5 days of illness. All the patients had a cutaneous form of the illness, which in one case proceeded very severly. All the remaining cases were in a light or medium form.

It must be noted here that sometimes with one carbuncle the disease proceeded relatively severely, and vice versa, even with numerous carbuncles (up to 10) a comparatively light course was observed.

Treatment was performed by the combined method. We used antianthrax serum, penicillin and Biomycin for the treatment.

Since we did not have human antianthrax serum available, we used animal serum for treatment. Depending on the severity of the course of the disease, the serum was introduced intramuscularly in quantities of 50--100 ml by the method of Bezredka. If an expressed therapeutic effect was absent following the first administration the serum was prescribed repeatedly up until there was a turning point in the course of the disease.

The penicillin was prescribed in a dose of 300,000 active units, and Biomycin -- 0.4 grams 4 times a day. The treatment with antibiotics lasted 10 days.

At the same time the patients were prescribed vitamins, a symptomatic agent and local salve therapy.

Already in 24-48 hours following the beginning of treatment an improvement in the state of health, a lessening of intoxication, and a lowering of temperature were observed in all cases. If the patients did not have a temperature reaction the therapeutic effect was shown in an improvement in the state of health, a lessening of inflammatory edema, and the phenomena of regional lymphadenitis.

Only in one case the serum treatment was complicated with a light form of serum illness. Following the abolition of the antibiotics, in many patients a prolonged subferbrile period with a good state of health was noted.

In the patient with the severe course of anthrax, a good therapeutic effect was achieved by combining the serotherapy and antibiotics with the intramuscular administration of cortisone. As an illustration we will cite the history of the disease.

Patient R., 54 years old, arrived in the hospital on the 2-3 day of illness with complaints of severe weakness, headache, chills, pain and edema in the right talocalcaneal joint.

The source of the infection was the forced slaughtering of a cow in which the retrospective diagnosis was anthrax. Infection of the patient took place on 27 July following processing of the infected meat, and the portal of entry was a spot on the right heel which was irritated from rubbing.

At the time of admission the condition of the patient was average severity, temperature 37.5°, and the senses were clear. A blister 4x4 cm in size with hemorrhagic contents was detected in the area of the right Achilles tendon. In the center of the blister a retraction with a black scab was noted. Around the blister the skin was quite clearly hyperemic and the adjoining tissue was sharply edematous. A sense of pain was lacking, and the sense of touch was preserved. The lymph nodes in the right inguinal area were enlarged to the size of a walnut, were painful, and were united with the lining tissue. On the right forearm there was a blister 1.2 x 1.3 cm in size with hemorrhagic contents, but it was painless. The surrounding tissue was mildly edematous.

The pulse was 78 beats a minute, of a satisfactory filling and tension, and rhythmic.

At admission, hemoglobin was 13 g%, leucocytes 8300, erythrocytes 3,850,000; ESR 6 mm an hour. In the urine there were individual fresh erythrocytes in a field of vision, but normal in other respects.

Treatment prescribed: 60 ml of antianthrax serum intramuscularly, 300,000 active units of penicillin 4 times a day, 0.4 grams of Biomycin 4 times, 0.25 g of ascorbic acid 3 times, 20 ml of 40% glucose intravenously, local bandaging with "oxycort" salve.

On 31 June /?/ the condition of the patient deteriorated, the temperature rose to 38.9°, there was vomiting, locomotive restlessness, delirium, and then consciousness faded away. Rigidity of the occipital muscles set in. A lumbar puncture was performed on the patient. The fluid ran out in drops and had an xanthochromic color, but the causative agent was not isolated.

Daily we continued to administer the patient 100 ml of antianthrax serum (all told 600ml) and subsequently administered 60 mg of cortisone intramuscularly 4 times a day for the first 2 days, then the dose was gradually reduced (all told 1180 mg for the course).

Beginning with 2 September the condition of the patient began to improve, consciousness was restored, vomiting gradually ceased, and by 6 September the temperature dropped to normal. Then it remained at subfebrile figures for a long period of time.

The patient recovered. Clinical diagnosis: Anthrax, cutaneous form, severe course.

Various ointments were used locally on all the patients (Vishnevskiy, "oxycort", tetracycline and prednisolone). The most expressed effect was observed during treatment with salve which contained prednisolone. However, if there was deep necrosis of the tissues the subsequent healing of the sores took place very slowly.

Thus, the results of our observations make it possible to recommend a complex therapy for the treatment of anthrax patients -- the use of antianthrax serum, penicillin, Biomycin, vitamins and symptomatic agents. In the more severe cases it is necessary to additionally make use of hormone therapy.

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